

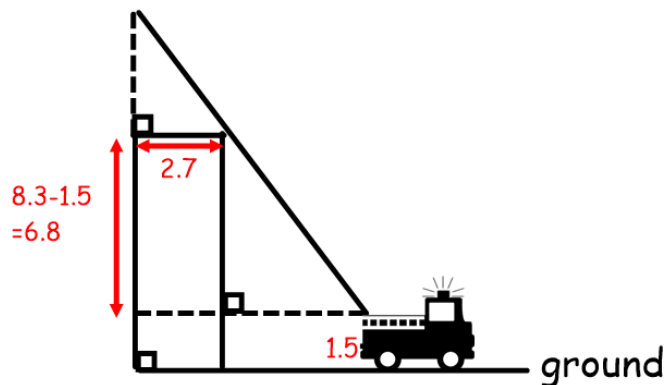
4.5 Solving Problems Using Acute Angle

Ex 1: Using right angle models

A ladder leaning against a building makes an angle of 26° with the vertical. The ladder just touches the building and the man at the top of the ladder is directly above a point 2.7m in from the edge of the building. If the building is 8.3m and the bottom of the ladder is on the truck, 1.5 m above the ground, how long is the ladder?

Picture it:

side view



Ex 2:

While cruising at a speed of 400 km/h you identify a storm cloud 45 km away. To avoid turbulence you start elevating up at an angle of elevation of 15° . If you maintain the same speed and direction for 6 min, how far will you be from the storm cloud in 6 minutes?

Picture it:



Distance = speed x time (watch your units)

$$\begin{aligned} d &= 400 \left(\frac{6 \text{ min}}{60 \text{ min in 1 hr}} \right) \\ &= 40 \text{ km} \end{aligned}$$



Ex 3:

A jet and a plane are 7.5 km from each other (at the same altitude jet is ahead of the plane). From the top of the Eiffle tower the airplanes are separated on an angle of 68° . If the jet is 5.2 km from the top of the tower, how far is the plane from the top of the Eiffle tower?

Picture it:



Ex 4:

A bolt of material covers 100m^2 ,
and you can buy full bolts only.
How many bolts would be needed to
make a triangular sail with dimensions
of $27\text{m} \times 21\text{m} \times 18\text{m}$?

Hmwk:

p 309 #1, 3-7,9,12,13

Try some questions from the mid
chapter review p 314-315